The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows.

A reduced near-infrared radiation transmitting, reduced ultraviolet radiation transmitting, electrochromic glazing assembly comprising:

first and second spaced, optically transparent, elements, said elements each having outside and inside surfaces and defining a space between the outside surface of said first element and the inside surface of said second element;

an electrochromic medium confined in said space whose light transmittance is variable upon the application of an electric field thereto;

means for applying an electric field to said electrochromic medium to cause variation in the light transmittance of said medium;

ultraviolet radiation reducing means incorporated in said assembly for reducing ultraviolet radiation degradation of said electrochromic medium in said assembly and for reducing ultraviolet radiation transmittance through said assembly; and

near-infrared reflective means located on at least one of said first and second elements for reducing the transmission of near-infrared radiation through said window assembly, said reflective means incorporating at least one semitransparent, elemental, thin metal film;

said elemental thin metal film reflecting at least about 30% of the solar energy for Air Mass 2 in the spectral region from 800 nanometers to 2500 nanometers.

The glazing assembly of claim 1 wherein said elemental thin film has a physical thickness of from about 80 angstroms to about 300 angstroms.

-3-

The glazing assembly of claim 2 wherein said elemental thin film has a sheet electrical resistance of no greater than about 8 ohms/square.

-4-

The glazing assembly of claim 3 wherein said elemental thin metal film is selected from the group consisting of gold, copper, aluminum, silver, and alloy combinations thereof.

-5-

The glazing assembly of claim 3 wherein said elemental thin metal film is silver.

-6-

The glazing assembly of claim 5 wherein said near-infrared reflective means is a thin film stack including said elemental thin metal film sandwiched between optically transparent thin metal compound films selected from the group consisting of metal oxide, metal nitride, metal halide, and metal sulfide thin films.

-7-

The glazing assembly of claim 6 wherein said thin metal compound films of said thin film stack are selected from the group consisting of zinc oxide, titanium oxide, vanadium oxide, zirconium oxide, tungsten oxide, indium oxide, bismuth oxide, magnesium fluoride, cerium oxide, indium/tin oxide, tin oxide, zinc sulfide, silicon oxide and silicon nitride.

-8-

The glazing assembly of claim 1 wherein said near-infrared reflective means is a thin film stack including said elemental thin metal film sandwiched between optically transparent thin metal compound films selected from the group consisting of metal oxide, metal nitride, metal halide, and metal sulfide thin films.

-9-

The glazing assembly of claim 8 wherein said thin metal compound films of said thin film stack are selected from the group consisting of zinc oxide, titanium oxide, vanadium oxide, zirconium oxide, tungsten oxide, indium oxide, bismuth oxide, magnesium fluoride, cerium oxide, indium/tin oxide, tin oxide, zinc sulfide, silicon oxide and silicon nitride.

-10-

The glazing assembly of claim 1 further comprising spectrally selective absorbing means for absorbing more light in those regions of the visible spectrum from about 560 nanometers to about 780 nanometers than is absorbed in those regions of the visible spectrum from about 400 nanometers to about 560 nanometers.

-11-

The glazing assembly of claim 1 wherein at least one of said elements is formed from specialized glass which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-12-

The glazing assembly of claim 11 wherein said specialized blue tint glass is the outermost or outside element in the window assembly.

-13-

The glazing assembly of claim 11 wherein said specialized blue tint glass element is the innermost or inside element in the window assembly.

-14-

The glazing assembly of claim 1 wherein at least one of said elements incorporates a UV absorbing glass sheet comprising at least 0.2 weight percent of one of cerium oxide, iron oxide and titanium dioxide.

-15-

The glazing assembly of claim 1 wherein said second element is a laminate assembly adapted to be closer to the exterior of the vehicle in which said assembly is mounted and including first and second spaced, optically transparent panels, said panels each having outside and inside surfaces and secured to one another by an intermediate layer.

-16-

The glazing assembly of claim 15 wherein said near-infrared reflector is located between said first and second panels.

-17-

The glazing assembly of claim 16 wherein at least one of said panels is formed from highly light transmitting glass.

-18-

The glazing assembly of claim 17 wherein said one glass panel is formed from specialized glass which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-19-

The glazing assembly of claim 18 wherein said intermediate layer comprises an optically transparent polymeric adhesive substance having scatterproofing and spectrally selective absorbing characteristics, and said ultraviolet radiation reducing means being incorporated therein.

-20-

The glazing assembly of claim 15 wherein said intermediate layer is a sheeting layer.

-21-

The glazing assembly of claim 15 wherein said intermediate layer includes a layer of polyvinylbutyral sheeting.

-22-

The glazing assembly of claim 15 wherein at least one of said panels includes a layer of UV radiation reducing polymeric film on at least one surface thereof.

-23-

The glazing assembly of claim 21 wherein said polymeric film is on a surface of said assembly adapted to face the interior of the vehicle in which said assembly is mcunted, said polymeric film including anti-misting means for reducing fogging thereon.

-24-

The glazing assembly of claim 15 wherein at least one panel in said laminate assembly is specialized blue tint glass.

-25-

The glazing assembly of claim 15 wherein at least one of said glass panels is formed from tempered safety glass.

-26-

The glazing assembly of claim 15 further comprising spectrally selective absorbing means for absorbing more light in those regions of the visible spectrum from about 560 nanometers to about 780 nanometers than is absorbed in those regions of the visible spectrum from about 400 nanometers to about 560 nanometers.

-27-

The glazing assembly of claim 26 wherein said spectrally selective absorbing means also include a polymeric interlayer which is highly light transmitting and which adheres said panels to one another.

-28-

The glazing assembly of claim 27 wherein said polymeric interlayer is a sheeting layer which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-29-

The glazing assembly of claim 1 wherein said assembly is one of a vehicle window, vehicle sunroof, a vehicle sun visor, and a vehicle shade band.

-30-

The glazing assembly of claim 1 wherein said assembly includes a perimetal coating on at least one surface of at least one of said elements for concealing from view said means for applying an electric field to said electrochromic medium.

-31-

The glazing assembly of claim 1 wherein said assembly includes seal means intermediate said elements for confining said electrochromic medium in said space; said seal means being color matched to structure in the vehicle which is adjacent said assembly.

-32-

The glazing assembly of claim 1 wherein said first element is a laminate assembly adapted to be closer to the interior of the vehicle in which said assembly is mounted and including first and second spaced, optically transparent panels, said panels each having outside and inside surfaces and secured to one another by an intermediate layer.

-33-

The glazing assembly of claim 32 wherein said near-infrared reflector is located between said first and second panels.

-34-

The glazing assembly of claim 32 wherein said one glass panel is formed from highly light transmitting specialized glass which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

The glazing assembly of claim 32 wherein said intermediate layer comprises an optically transparent polymeric adhesive substance having scatterproofing, anti-lacerative and spectrally selective absorbing characteristics, and said ultraviolet radiation reducing means incorporated therein.

-36-

The glazing assembly of claim 35 wherein at least one of said glass panels is formed from tempered safety glass.

-37-

The glazing assembly of claim 32 further comprising spectrally selective absorbing means for absorbing more light in those regions of the visible spectrum from about 560 nanometers to about 780 nanometers than is absorbed in those regions of the visible spectrum from about 400 nanometers to about 560 nanometers.

-38-

A reduced near-infrared radiation transmitting, reduced ultraviolet radiation transmitting, electrochromic glazing assembly comprising:

first and second spaced, optically transparent, elements, said elements each having outside and inside surfaces and defining a space between the outside surface of said first element and the inside surface of said second element, one of said elements being a laminated assembly including first and second spaced, optically transparent panels, said panels each having outside and inside surfaces and secured to one another by an intermediate layer;

an electrochromic medium confined in said space whose light transmittance is variable upon the application of an electric field thereto;

means for applying an electric field to said electrochromic medium to cause variation in the light transmittance of said medium;

ultraviolet radiation reducing means incorporated in said assembly for reducing ultraviolet radiation degradation of said electrochromic medium in said assembly and for reducing ultraviolet radiation transmittance through said assembly; and

near-infrared reflective means located on at least one of said first and second elements for reducing the transmission of near-infrared radiation through said window assembly, said reflective means incorporating at least one semitransparent, elemental, thin metal film;

said elemental thin metal film reflecting at least about 30% of the solar energy for Air Mass 2 in the spectral region from 800 nanometers to 2500 nanometers.

-39-

The glazing assembly of claim 38 wherein said elemental thin metal film has a physical thickness of between about 80 angstroms to about 300 angstroms.

-40-

The glazing assembly of claim 39 wherein said elemental thin metal film has a sheet electrical resistance of no greater than about 8 ohms/square.

-41-

The glazing assembly of claim 40 wherein said elemental thin metal film is selected from the group

consisting of gold, copper, aluminum, silver, and alloy combinations thereof.

-42-

The glazing assembly of claim 40 wherein said elemental thin metal film is silver.

-43-

The glazing assembly of claim 38 wherein said near-infrared reflective means is a thin film stack including said elemental thin metal film sandwiched between optically transparent thin metal compound films selected from the group consisting of metal oxide, metal nitride, metal halide, and metal sulfide thin films.

-44-

The glazing assembly of claim 43 wherein said thin metal compound films of said thin film stack are selected from the group consisting of zinc oxide, titanium oxide, vanadium oxide, zirconium oxide, tungsten oxide, indium oxide, bismuth oxide, magnesium fluoride, cerium oxide, indium/tin oxide, tin oxide, zinc sulfide, silicon oxide and silicon nitride.

-45-

The glazing assembly of claim 38 further comprising spectrally selective absorbing means for absorbing more light in those regions of the visible spectrum from about 560 nanometers to about 780 nanometers than is absorbed in those regions of the visible spectrum from about 400 nanometers to about 560 nanometers.

-46-

The glazing assembly of claim 45 wherein at least one of said panels is formed from highly light transmitting glass.

-47-

The glazing assembly of claim 45 wherein one of said glass panels is formed from specialized glass which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-48-

The glazing assembly of claim 38 wherein said near-infrared reflector is located between said first and second panels of said one element.

-49-

The glazing assembly of claim 38 wherein said intermediate layer comprises an optically transparent polymeric adhesive substance having scatterproofing and spectrally selective absorbing characteristics, and said ultraviolet radiation reducing incorporated therein.

-50-

The glazing assembly of claim 38 wherein said intermediate layer is a sheeting layer which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-51-

The glazing assembly of claim 38 wherein at least one of said elements incorporates a UV absorbing glass sheet comprising at least 0.2 weight percent of one of cerium oxide, iron oxide and titanium dioxide.

-52-

The glazing assembly of claim 38 wherein at least one of said panels includes a layer of UV radiation reducing polymeric film on at least one surface thereof.

-53-

The glazing assembly of claim 52 wherein said polymeric film is on a surface of said assembly adapted to face the interior of the vehicle in which said assembly is mounted, said polymeric film including anti-misting means for reducing fogging thereon.

-54-

The glazing assembly of claim 38 wherein at least one of said glass panels is formed from tempered safety glass.

-55-

The glazing assembly of claim 38 wherein said assembly includes a perimetal coating on at least one surface of at least one of said elements for concealing from view said means for applying an electric field to said electrochromic medium.

-56-

The glazing assembly of claim 38 wherein said assembly includes seal means intermediate said elements for confining said electrochromic medium in said space; said seal means being color matched to structure in the vehicle which is adjacent said assembly.

-57-

A reduced near-infrared radiation transmitting, reduced ultraviolet radiation transmitting, safety-protected electrochromic vehicular glazing assembly comprising:

first and second spaced, optically transparent, elements, said elements each having outside and inside surfaces and defining a space between the outside surface of said first element and the inside surface of said second element, said second element being a laminate assembly

adapted to be closer to the exterior of the vehicle in which said assembly is mounted and including first and second spaced, optically transparent panels, said panels each having outside and inside surfaces and secured to one another by an intermediate layer;

an electrochromic medium confined in said space whose light transmittance is variable upon the application of an electric field thereto;

means for applying an electric field to said electrochromic medium to cause variation in the light transmittance of said medium;

ultraviolet radiation reducing means incorporated in said assembly for reducing ultraviolet radiation degradation of said electrochromic medium in said assembly and for reducing ultraviolet radiation transmittance through said assembly;

safety means incorporated in said assembly for preventing fragment scattering, lacerative injuries and contact with said electrochromic medium should one of said elements break or crack; and

near-infrared reflective means located on at least one of said first and second elements for reducing the transmission of near-infrared radiation through said window assembly, said reflective means incorporating at least one semitransparent, elemental, thin metal film.

-58-

The glazing assembly of claim 57 wherein said elemental, thin metal film has a physical thickness of between about 80 angstroms to about 300 angstroms.

-59-

The glazing assembly of claim 58 wherein said elemental thin metal film has a sheet electrical resistance of no greater than about 8 ohms/square.

-60-

The glazing assembly of claim 59 wherein said safety means includes a layer of said UV radiation reducing polymeric film on a surface of at least one of said elements.

-61-

The glazing assembly of claim 60 wherein said near-infrared reflective means is located between said first and second panels of said second element.

-62-

The glazing assembly of claim 61 wherein said elemental thin metal film of said near-infrared reflective means is selected from the group consisting of gold, copper, aluminum, silver, and alloy combinations thereof.

-63-

The glazing assembly of claim 61 wherein said elemental thin metal film is silver.

-64-

The glazing assembly of claim 61 wherein said near-infrared reflective means is a thin film stack including said elemental thin metal film sandwiched between optically transparent thin metal compound films selected from the group consisting of metal oxide, metal nitride, metal halide, and metal sulfide thin films.

-65-

The glazing assembly of claim 64 wherein said thin metal compound films of said thin film stack are selected

from the group consisting of zinc oxide, titanium oxide, vanadium oxide, zirconium oxide, tungsten oxide, indium oxide, bismuth oxide, magnesium fluoride, cerium oxide, indium/tin oxide, tin oxide, zinc sulfide, silicon oxide and silicon nitride.

-66-

The glazing assembly of claim 61 further comprising spectrally selective absorbing means for absorbing more light in those regions of the visible spectrum from about 560 nanometers to about 780 nanometers than is absorbed in those regions of the visible spectrum from about 400 nanometers to about 560 nanometers.

-67-

The glazing assembly of claim 66 wherein at least one of said panels is formed from highly light transmitting glass; said glass panel including said spectrally selective absorbing means, said glass panel being formed from specialized glass which absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-68-

The glazing assembly of claim 67 wherein said specialized blue tint glass panel is the outermost or outside panel in said laminate assembly.

-69-

The glazing assembly of claim 66 wherein said intermediate layer is a polymeric layer incorporating said safety means, said spectrally selective absorbing means, and said ultraviolet radiation reducing means therein.

-70-

The glazing assembly of claim 69 wherein said polymeric layer absorbs substantially more visible light in wavelengths higher than about 560 nanometers than in other regions of the visible spectrum and has a blue tint.

-71-

The glazing assembly of claim 57 wherein said safety means includes a polymeric layer on one surface of one of said elements having at least one of anti-lacerative and anti-misting characteristics.

-72-

The glazing assembly of claim 57 wherein at least one of said panels of said laminate assembly has a blue tint.

-73-

The glazing assembly of claim 57 wherein at least one of said elements incorporates a UV absorbing glass sheet comprising at least 0.2 weight percent of one of cerium oxide, iron oxide and titanium dioxide.

-74-

The glazing assembly of claim 57 wherein said assembly includes a perimetal coating on at least one surface of at least one of said elements for concealing from view said means for applying an electric field to said electrochromic medium.

-75-

The glazing assembly of claim 57 wherein said assembly includes seal means intermediate said elements for confining said electrochromic medium in said space; said seal means being color matched to structure in the vehicle which is adjacent said assembly.